



Howrey Docket No. 01561.0002.CNUS03

*PAW*

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

**Arnold J. Mandell, et al.**

Application No.: 10/777,829

Filed: February 11, 2004

For: **ALGORITHMIC DESIGN OF  
PEPTIDES FOR BINDING AND/OR  
MODULATION OF THE  
FUNCTIONS OF RECEPTORS  
AND/OR OTHER PEPTIDES**

Art Unit: To Be Assigned

Examiner: To Be Assigned

### TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.56, 1.97 and 1.98

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants submit the following documents for appropriate action by the U.S. Patent and Trademark Office:

- Information Disclosure Statement under 37 C.F.R. §1.56, 1.97 and 1.98
- Form PTO-1449 (3 pages)
- Return postcard.

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#### CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

May 12, 2004  
Date of Deposit

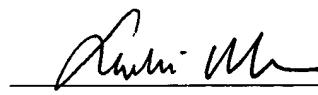
Robin L. Clow  
Name of Person Mailing Paper

*R. Clow*  
Signature of Person Mailing Paper

Applicant believes no fees are due in connection with this Information Disclosure Statement. However, if any fees are in fact due, the Commissioner is hereby authorized to charge our Deposit Account No.**08-3038**, referencing Docket No. 01561.0002.CNUS03.

Respectfully submitted,

Dated: May 12, 2004

  
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Lorelei P. Westin, Reg. No. 52,353

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**Information Disclosure Statement**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants hereby submit, without admission of prior art effect thereof, the documents listed on the accompanying Form PTO-1449 pursuant to the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. In accordance with 37 CFR 1.98(d), Applicants do not include 18 references, denoted AA– AR, which were previously submitted to the PTO in connection

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I hereby certify that this paper (along with any referred to as being attached hereto) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Robin L. Clow  
Name of Person Mailing Paper

R. Clow  
Signature of Person Mailing Paper

with U.S. Patent Application Serial Nos. 09/767,460 filed January 23, 2001, and 10/376,695 filed February 26, 2003, for which the present application claims an earlier effective filing date.

Applicant has listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

This Information Disclosure Statement is being filed within three months of the U.S. filing date or before the mailing date of a first Office Action on the merits, therefore no statement under 37 C.F.R. § 1.97(e) or fee is required.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and to indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 08-3038, referencing Howrey Docket No. 01561.0002.CNUS03.

Respectfully submitted,

Date: May 12, 2004

  
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Lorelei P. Westin, Reg. No. 52,353

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<b>FORM PTO-1449</b>		<b>ATTY. DOCKET NO.</b>	<b>SERIAL NO.</b>
<b>LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>  <i>O IF</i> <b>(Use several sheets if necessary)</b> <b>MAY 17 2004</b> <small>PATENT &amp; TRADEMARK</small>		01561.0002.CNUS03	
		<b>APPLICANT:</b> Arnold J. Mandell, et al.	
		<b>FILING DATE:</b> 2/11/04	<b>GROUP:</b> N/A

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
				None			

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES	NO
				None				

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)**

AA	Mandell, A.J. (1984) Non-equilibrium behavior of some brain enzyme and receptor systems. Ann. Rev. Pharm. Toxicol. 24:237-274
AB	Mandell, A.J., Russo, P.V. and Blomgren, B.W. (1987) Complex hydrophobic sequence transformation predicts mutual recognition by polypeptides and proteins. Ann. N.Y. Acad. Sci. 504:88-118.
AC	Mandell, A.J., Selz, K.A. and Shlesinger, M.F. (1997) Mode matches and their locations in the hydrophobic free energy sequences of peptide ligands and their receptor eigenfunctions. Proc. Natl. Acad. Sci. 94:13576-13581.
AD	Mandell, A.J., Selz, K.A. and Shlesinger, M.F. (1997) Wavelet transformation of protein hydrophobicity sequences suggests their memberships in structural families. Physica A224: 254-262.

EXAMINER:	DATE CONSIDERED:
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EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to applicant

## CIP &amp; LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

MAY 17 2004

(Use several sheets if necessary)

PATENT & TRADEMARK		Mandell, A.J., Selz, K.A. and Shlesinger, M.F. (1997) Hydrophobic free energy eigenfunctions help define continuous wavelet transformations of amino acid sequences of protein families. Proc. Intl. (Fermi) Sch. Phys. CXXXIV, 175-192.
	AE	Di Marzo, E.A. and Mandell, A.J. (1997) Phase transition behavior of a linear macromolecule threading a membrane. J. Chem. Physics 197:5510-5514.
	AG	Mandell, A.J., Owens, M.J. Selz, K.A., Morgan, W.N., Schlesinger, M.F. and Nemeroff, C.G. (1998) Mode matches in hydrophobic free energy eigenfunctions predict protein-protein interactions. Biopolymers 46:89-101.
	AH	Selz, K.A., Mandell, A.J., and Shlesinger, M.F. (1998) Hydrophobic free energy eigenfunctions of pore, channel and transporter proteins contain B-burst patterns. Biophysical J. 7:2332-2342.
	AI	Mandell, A.J., Selz, K.A. and Shlesinger, M.F. (1998) Transformational homologies in amino acid sequences suggest membership in protein families. J. Stat. Phys. 93:673-697.
	AJ	Mandell, A.J., Selz, K.A., Shlesinger, M.F., and Kuhar, M.J. (1999) Linear and entropic transformations of the hydrophobic free energy sequence help characterize a novel brain polyprotein: CART. In (M.T. Batchelor and L. Wille, eds.), <u>Statistical Physics on the Eve of the Twenty-First Century</u> . World Scientific, NJ, pp. 131-152.
	AK	Manavalan, P. and Ponnuswamy, P.K. (1978) Statistical distribution of hydrophobic residues along the length of protein chains, Biophys. J., Volume 57 pp. 911-921.
	AL	White, Stephen H. and Jacobs, Russell E. (1994) Global Statistics of Protein Sequences: Implications for the Origin, Evolution, and Prediction of Structure. Annu. Rev. Biophys. Biomol. Struct. 23:407-439.
	AM	Doyle, P.M. (1995) Combinatorial Chemistry in the Discovery and Development of Drugs. J. Chem. Tech. Biotechnol. 64:317-324.
	AN	Gordon, E.M., Barrett, R.W., Dower, W.J., Fodor, S.P.A. and Gallop, M.A. (1994) Applications of Combinatorial Technologies to Drug Discovery. 2. Combinatorial Organic Synthesis, Library Screening Strategies, and Future Directions. J. Med. Chem. 37(10):1385-1401.
	AO	Houghton, R.A. (1993) The Broad Utility of Soluble Peptide Libraries for Drug Discovery". Gene 137:7-11.

SD-84546.1

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**LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S  
INFORMATION DISCLOSURE STATEMENT**

**(Use several sheets if necessary)**

ATTY. DOCKET NO.

01561.0002.CNUS03

SERIAL NO.

**APPLICANT:**

Arnold J. Mandell, et al.

**FILING DATE:**

2/11/04

**GROUP:**

N/A

	AP	Mandell, Arnold J., Selz, Karen A., and Shlesinger, Michael F. Predicting Peptide – Receptor, Peptide- Protein, and Chaperone-Protein Binding using patterns in amino acid hydrophobic free energy sequences, The Journal of Physical Chemistry B, Vol 104, No. 16, pgs 3953-3959
	AQ	Chorev M. et al. "Recent Developments in Retro Peptides and Proteins – An Ongoing Topochemical Exploration", Trends in Biotechnology, Elsevier, Amsterdam, NL., vol. 13, no. 10, October 1995 (1995-10), pages 438-445, XP004207219 ISSN: 0167-7799
	AR	RAFFA: "Drug-Receptor Thermodynamics: Introduction and Applicatons," May 2001 (2001-05), John Wiley & Sons XP001153602. Mandell et al: Hydrophobic Mode-Targeted, Algorithmically Designed Peptide Ligands Structure as Modulators of Protein Thermodynamic Structure and Function page 655-page 700

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